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Complete set of claims

1(currently amended). A composition for formation of etching stopper layer, comprising a silicon-containing polymer, wherein 5% to 100% by mole, based on the total number of moles of silicon contained in the silicon-containing polymer in the composition, of silicon is contained in a disilylbenzene structure, and further where the silicon-containing polymer has a carbon content of not less than 30% by weight.

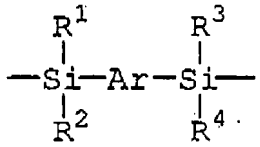
2(previously presented). The composition for formation of etching stopper layer according to claim 1, wherein said silicon-containing polymer has been produced by polymerizing a compound having a disilylbenzene structure and an aromatic group-containing compound.

3(currently amended). A silicon-containing material for formation of etching stopper layer, comprising a disilylbenzene structure formed by curing a silicon-containing polymer, wherein 5% to 100% by mole, based on the total number of moles of silicon contained in the silicon-containing material, of silicon is contained in a disilylbenzene structure, and further where the silicon-containing polymer has a carbon content of not less than 30% by weight.

4(currently amended). A semiconductor device comprising, as an etching stopper layer, a silicon-containing material for formation of etching stopper layer ~~according to claim 3, A~~ comprising a silicon-containing material for formation of etching stopper layer, comprising a disilylbenzene structure formed by curing a silicon-containing polymer, wherein 5% to 100% by mole, based on the total number of moles of silicon contained in the silicon-containing material, of silicon is contained in a disilylbenzene structure.

5(previously presented). A process for producing a semiconductor device, comprising the steps of: forming an insulating layer and an etching stopper layer on a substrate; removing part of the insulating layer by dry etching; and filling an electrically conductive material into a groove or hole thus formed, wherein said etching stopper layer is formed by curing a composition comprising a silicon-containing polymer, wherein 5% to 100% by mole, based on the total number of moles of silicon contained in the silicon-containing polymer, of silicon is contained in a disilylbenzene structure.

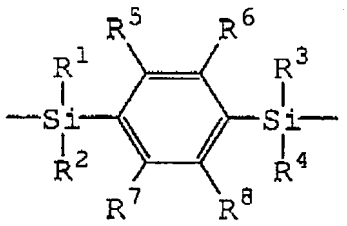
6(previously presented). The composition of claim 1, where the disilylbenzene structure is represented by formula (I)



(I)

wherein R^1 to R^4 each independently are selected from hydrogen, an alkyl group, an alkenyl group, a cycloalkyl group, an aryl group, an aralkyl group, an alkylamino group, and an alkylsilyl group, and Ar represents an aryl group.

7(previously presented). The composition of claim 1, where the disilylbenzene structure is represented by formula (II)



(II)

wherein R^1 to R^4 each independently are selected from hydrogen, an alkyl group, an alkenyl group, a cycloalkyl group, an aryl group, an aralkyl group, an alkylamino group, and an alkylsilyl group; and R^5 to R^8 are independently selected from hydrogen, a C_1 to C_3 alkyl group, a halogen atom, a C_1 to C_3 alkoxide group, and a C_1 to C_3 amino group.

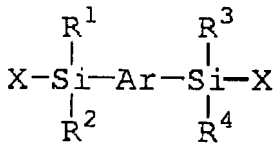
8(previously presented). The composition of claim 1, where the polymer further comprises a comonomeric unit.

9(previously presented). The composition of claim 8, where the comonomeric unit comprises an aromatic group.

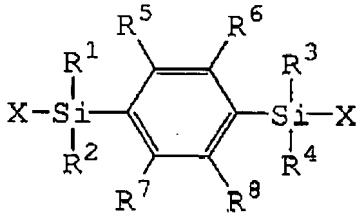
10(previously presented). The composition of claim 8, where the comonomeric unit is derived from a monomer selected from phenyltrichlorosilane, diphenyldichlorosilane, methyltrichlorosilane, and methylhydrodichlorosilane.

11(previously presented). The composition of claim 1, where the composition further comprises an additional polymer.

12(previously presented). The composition of claim 2, where the compound having a disilylbenzene structure is represented by formula (Ia) or (IIa)



(Ia)



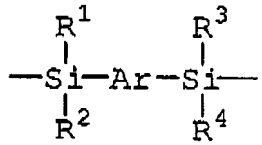
(IIa)

wherein R^1 to R^4 each independently are selected from hydrogen, an alkyl group, an alkenyl group, a cycloalkyl group, an aryl group, an aralkyl group, an alkylamino group, and an alkylsilyl group, and Ar represents an aryl group; and R5 to R8 are independently selected from hydrogen, a C_1 to C_3 alkyl group, a halogen atom, a C_1 to C_3 alkoxide group, and a C_1 to C_3 amino group; and, X's, which may be same or different, represented by a halogen atom or a hydroxyl group.

13(previously presented). The composition of claim 2, where the compound having the silylbenzene structure is selected from 1,4-bis(dimethylchlorosilyl) benzene, 1,4-bis(hydroxydimethylchlorosilyl)benzene, and 1,4-bis(diethylchlorosilyl)benzene.

14(previously presented). The composition of claim 2, where the aromatic group containing compound is selected from phenyltrichlorosilane, diphenyldichlorosilane, methyltrichlorosilane, and methylhydrodichlorosilane.

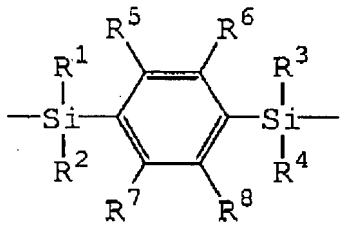
15(previously presented). The silicon-containing material of claim 3, where the disilylbenzene structure is represented by formula (I)



(I)

wherein R^1 to R^4 each independently are selected from hydrogen, an alkyl group, an alkenyl group, a cycloalkyl group, an aryl group, an aralkyl group, an alkylamino group, and an alkylsilyl group, and Ar represents an aryl group.

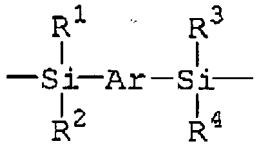
16(previously presented). The silicon-containing material of claim 3, where the disilylbenzene is represented by formula (II),



(II)

wherein R^1 to R^4 each independently are selected from hydrogen, an alkyl group, an alkenyl group, a cycloalkyl group, an aryl group, an aralkyl group, an alkylamino group, and an alkylsilyl group; and R^5 to R^8 are independently selected from hydrogen, a C_1 to C_3 alkyl group, a halogen atom, a C_1 to C_3 alkoxide group, and a C_1 to C_3 amino group.

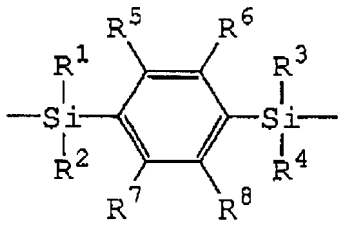
17(previously presented). The semiconductor device according to claim 4, where the disilylbenzene structure is represented by formula (I)



(I)

wherein R^1 to R^4 each independently are selected from hydrogen, an alkyl group, an alkenyl group, a cycloalkyl group, an aryl group, an aralkyl group, an alkylamino group, and an alkylsilyl group, and Ar represents an aryl group.

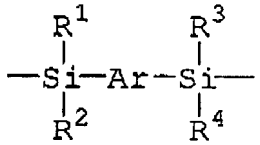
18(previously presented). The semiconductor device according to claim 4, where the disilylbenzene structure is represented by formula (II),



(II)

wherein R^1 to R^4 each independently are selected from hydrogen, an alkyl group, an alkenyl group, a cycloalkyl group, an aryl group, an aralkyl group, an alkylamino group, and an alkylsilyl group; and R5 to R8 are independently selected from hydrogen, a C_1 to C_3 alkyl group, a halogen atom, a C_1 to C_3 alkoxide group, and a C_1 to C_3 amino group.

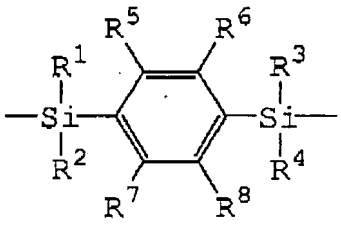
19(previously presented). The process of claim 5, where the disilylbenzene structure is represented by formula (I),



(I)

wherein R^1 to R^4 each independently are selected from hydrogen, an alkyl group, an alkenyl group, a cycloalkyl group, an aryl group, an aralkyl group, an alkylamino group, and an alkylsilyl group, and Ar represents an aryl group.

20(previously presented). The process of claim 5, where the disilylbenzene structure is represented by formula (II),



(II)

wherein R^1 to R^4 each independently are selected from hydrogen, an alkyl group, an alkenyl group, a cycloalkyl group, an aryl group, an aralkyl group, an alkylamino group, and an alkylsilyl group; and R^5 to R^8 are independently selected from hydrogen, a C_1 to C_3 alkyl group, a halogen atom, a C_1 to C_3 alkoxide group, and a C_1 to C_3 amino group.